OIPE JC144 JUN 27 2005 PATENT & TRADEMARK OFFICE

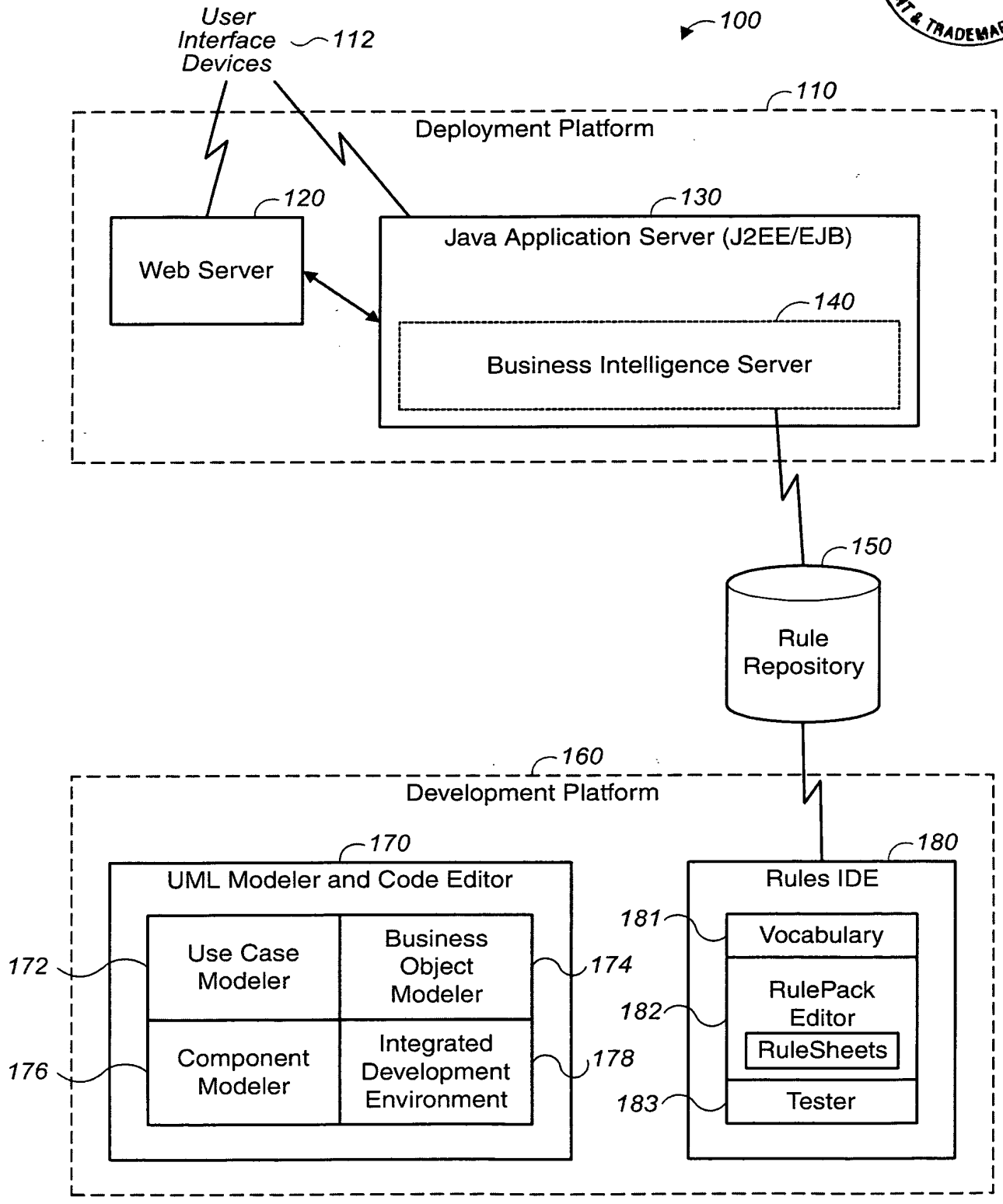

FIG._1

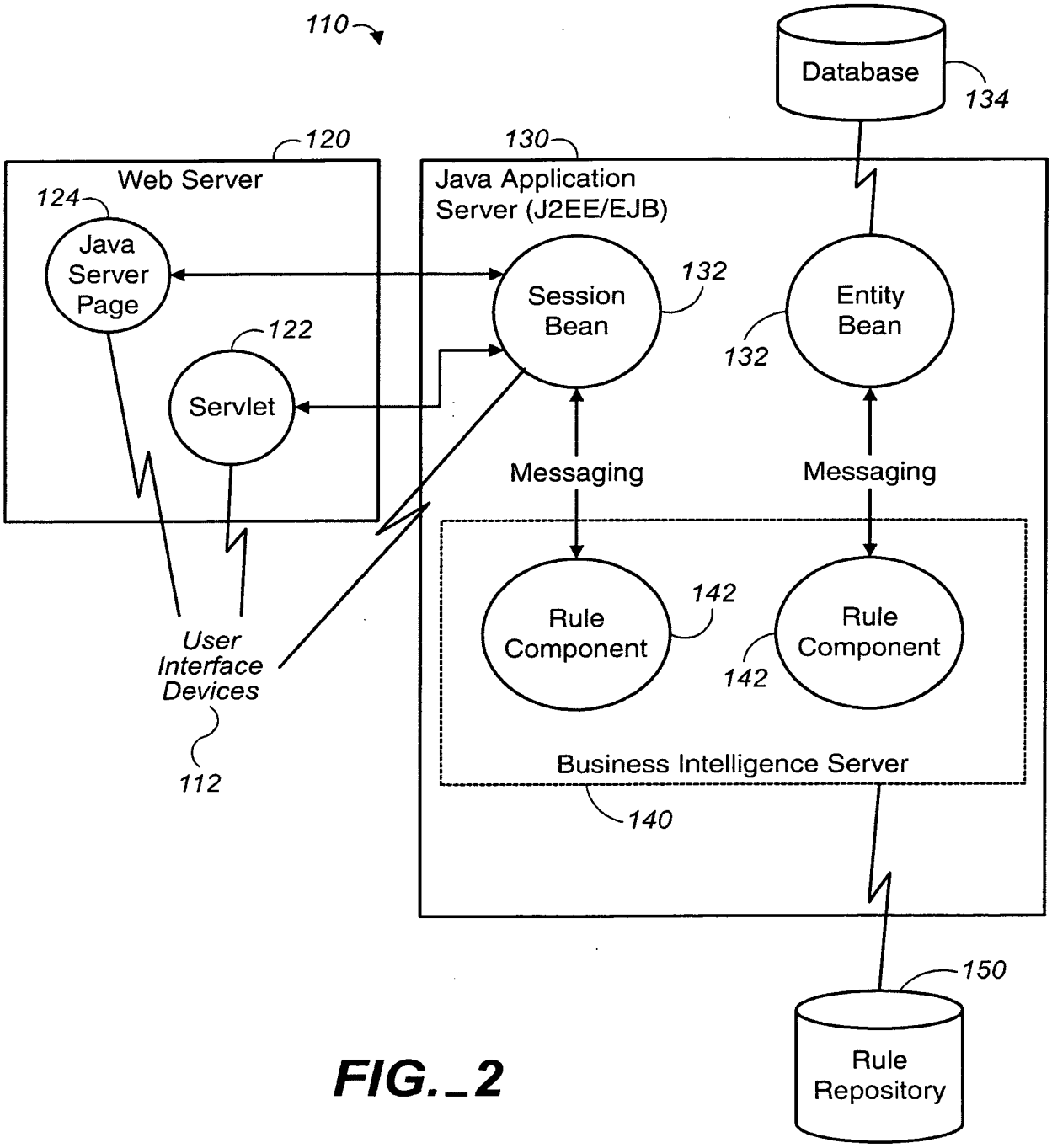
110
Database
134
120
130
Web Server
Java Application
Server (J2EE/EJB)
124
Java
Server
Page
122
Servlet
Session
Bean
132
Entity
Bean
132
Messaging
Messaging
Rule
Component
142
Rule
Component
142
User
Interface
Devices
112
Business Intelligence Server
140
150
Rule
Repository

FIG._2

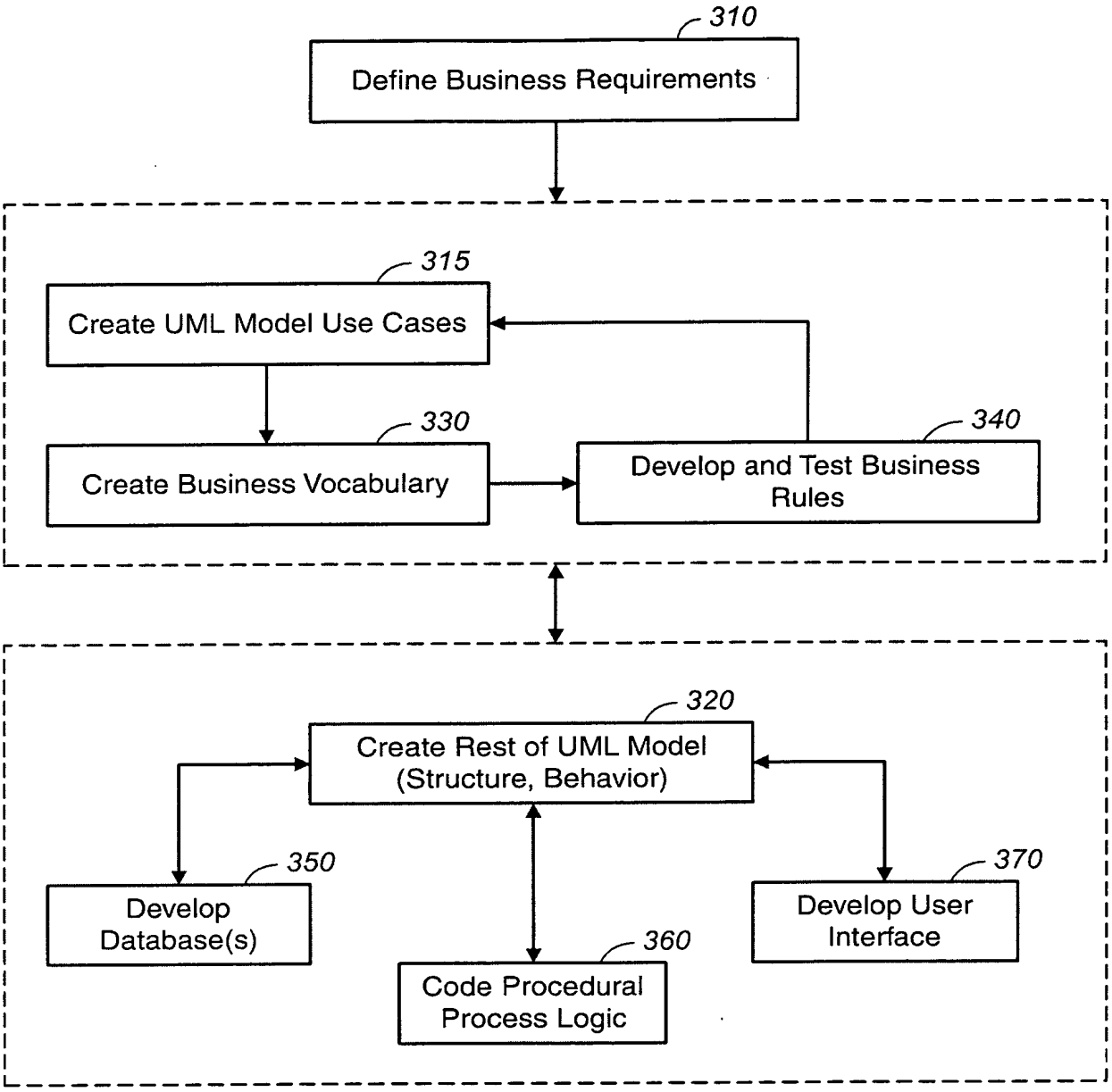
310
Define Business Requirements
315
Create UML Model Use Cases
330
Create Business Vocabulary
340
Develop and Test Business Rules
320
Create Rest of UML Model (Structure, Behavior)
350
Develop Database(s)
360
Code Procedural Process Logic
370
Develop User Interface

FIG._3

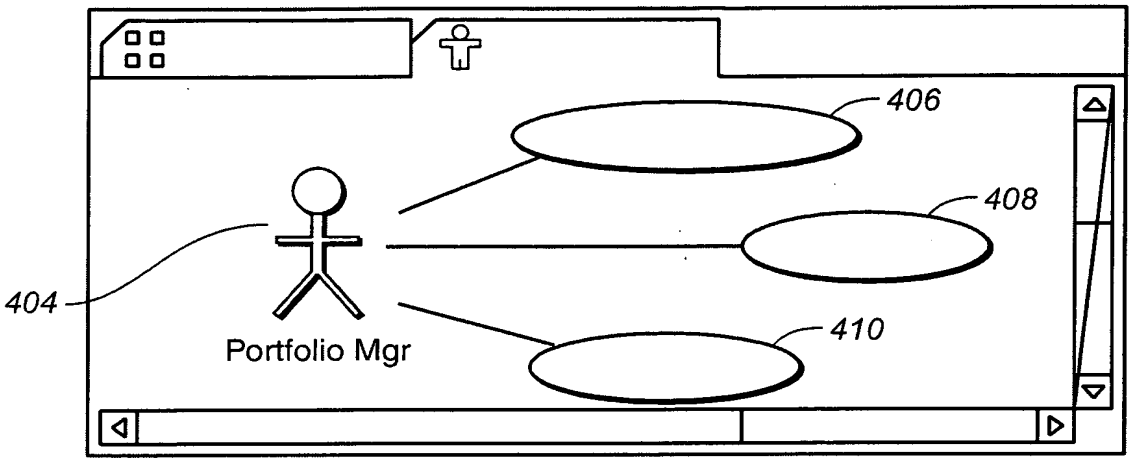
406
408
404
Portfolio Mgr
410

FIG._4

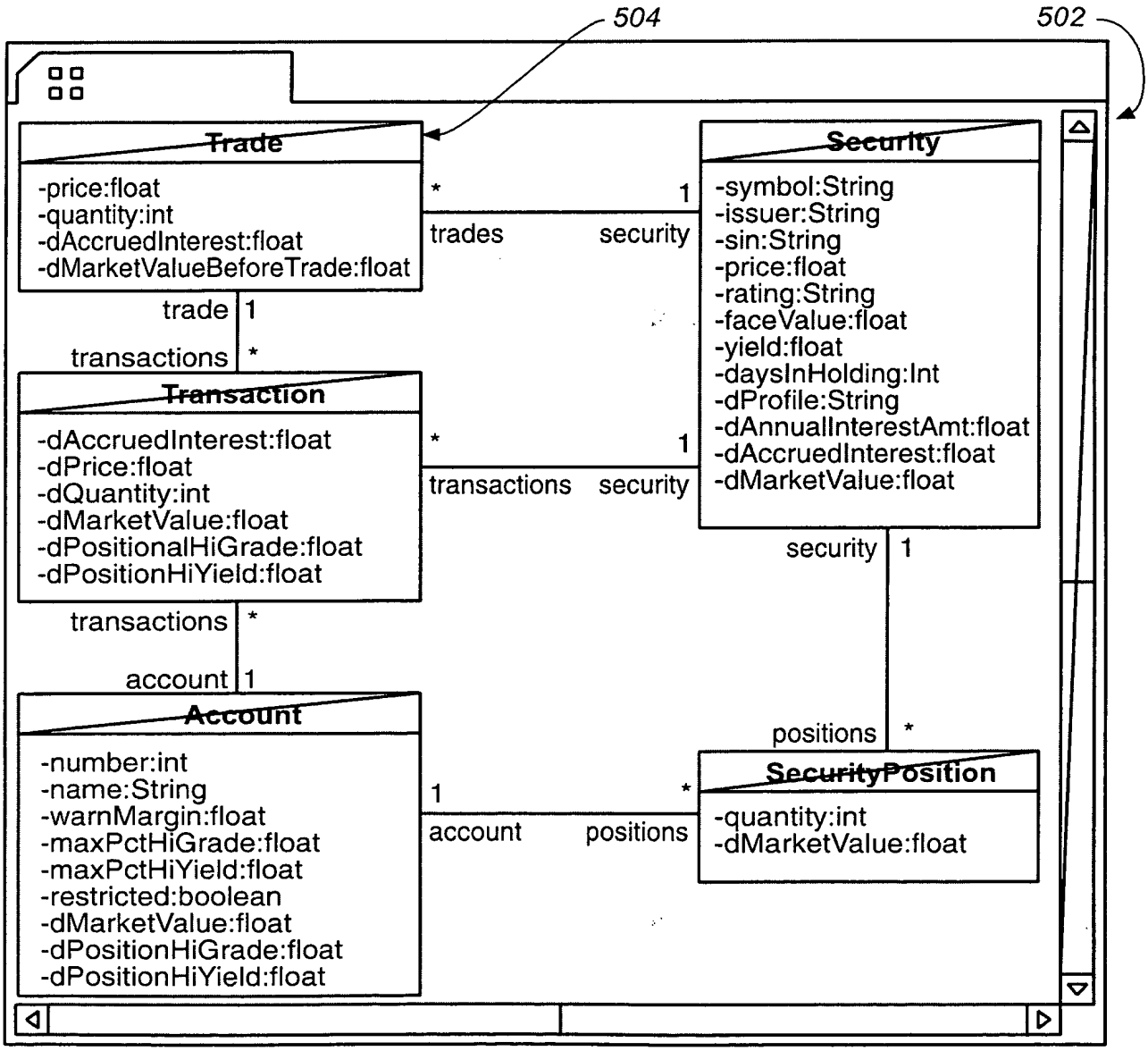
504
502
Trade
-price:float
-quantity:int
-dAccruedInterest:float
-dMarketValueBeforeTrade:float
*
1
trades
security
Security
-symbol:String
-issuer:String
-sin:String
-price:float
-rating:String
-faceValue:float
-yield:float
-daysInHolding:Int
-dProfile:String
-dAnnualInterestAmt:float
-dAccruedInterest:float
-dMarketValue:float
trade
1
transactions
*
Transaction
-dAccruedInterest:float
-dPrice:float
-dQuantity:int
-dMarketValue:float
-dPositionalHiGrade:float
-dPositionHiYield:float
*
1
transactions
security
security
1
transactions
*
account
1
Account
-number:int
-name:String
-warnMargin:float
-maxPctHiGrade:float
-maxPctHiYield:float
-restricted:boolean
-dMarketValue:float
-dPositionHiGrade:float
-dPositionHiYield:float
positions
*
SecurityPosition
-quantity:int
-dMarketValue:float
1
*
account
positions

FIG._5

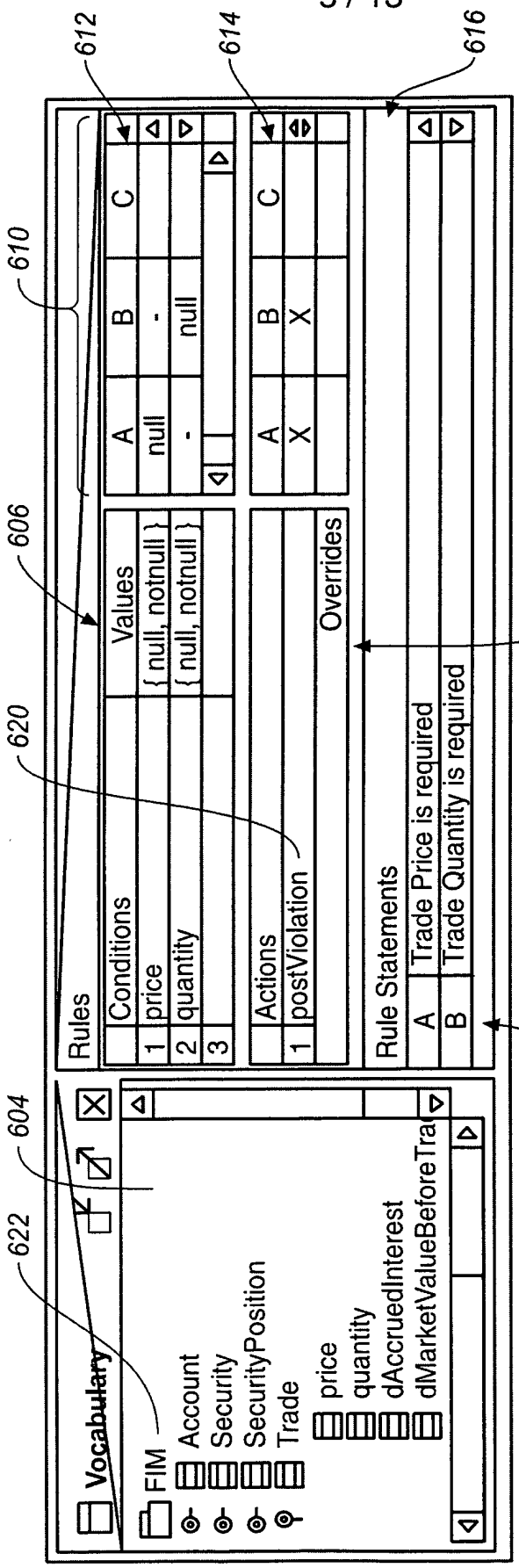
612
614
616
610
606
620
608
604
622
618
Vocabulary
FIM
Account
Security
SecurityPosition
Trade
price
quantity
dAccruedInterest
dMarketValueBeforeTra
Rules
Conditions
Values
1 price
{ null, notnull }
2 quantity
{ null, notnull }
3
A
B
C
null
-
-
null
Actions
1 postViolation
Overrides
A
X
B
X
C
Rule Statements
A Trade Price is required
B Trade Quantity is required

FIG._6

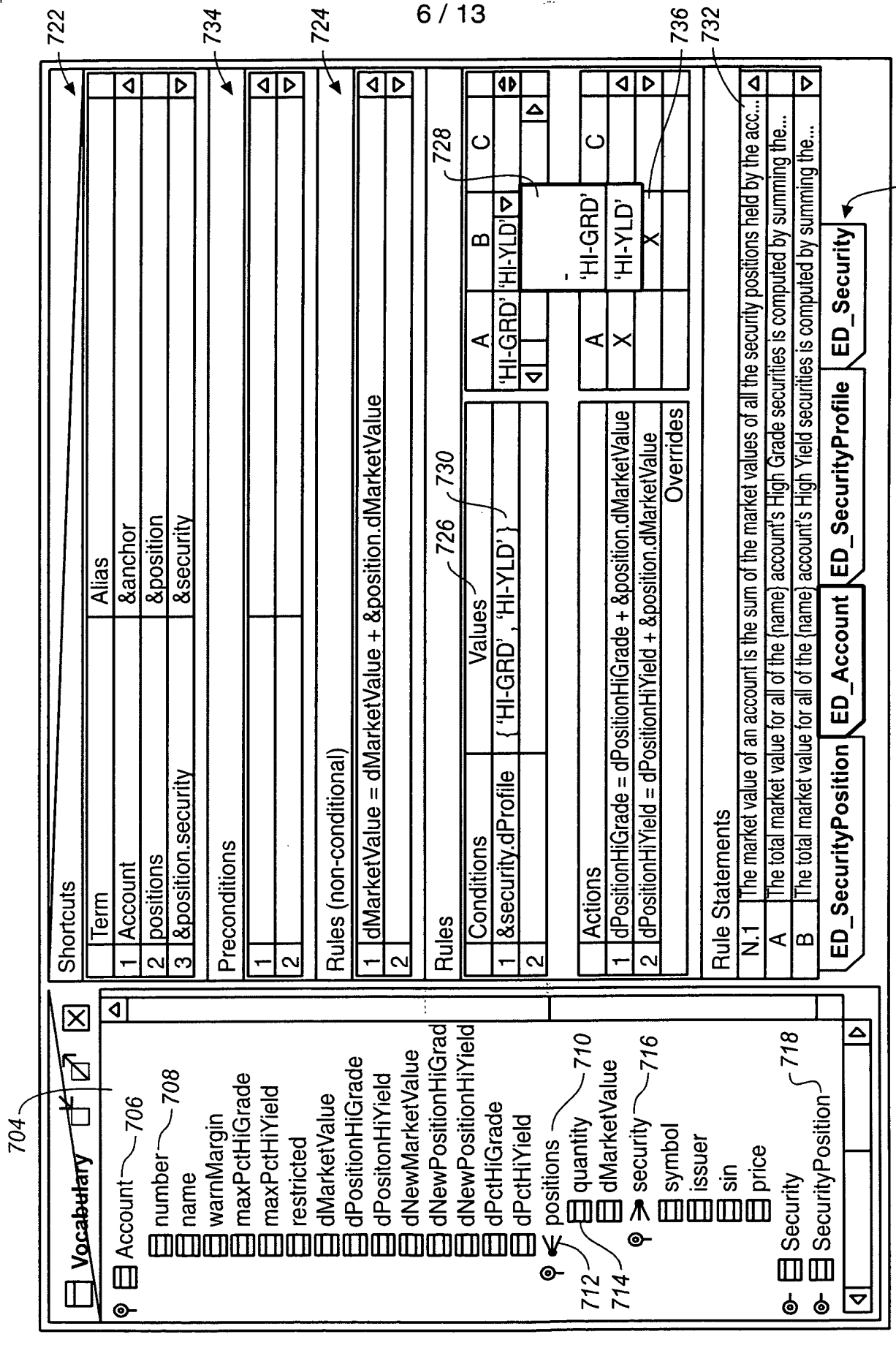
Vocabulary
Account
number
name
warnMargin
maxPctHiGrade
maxPctHiYield
restricted
dMarketValue
dPositionHiGrade
dPositonHiYield
dNewMarketValue
dNewPositionHiGrad
dNewPositionHiYield
dPctHiGrade
dPctHiYield
positions
quantity
dMarketValue
security
symbol
issuer
sin
price
Security
SecurityPosition
Shortcuts
Term
Alias
1 Account
&anchor
2 positions
&position
3 &position.security
&security
Preconditions
Rules (non-conditional)
1 dMarketValue = dMarketValue + &position.dMarketValue
2
Rules
Conditions
Values
1 &security.dProfile
{ 'HI-GRD', 'HI-YLD' }
2
A
B
C
'HI-GRD'
'HI-YLD'
Actions
1 dPositionHiGrade = dPositionHiGrade + &position.dMarketValue
2 dPositionHiYield = dPositionHiYield + &position.dMarketValue
Overrides
X
Rule Statements
N.1 The market value of an account is the sum of the market values of all the security positions held by the acc...
A The total market value for all of the {name} account's High Grade securities is computed by summing the...
B The total market value for all of the {name} account's High Yield securities is computed by summing the...
ED_SecurityPosition
ED_Account
ED_SecurityProfile
ED_Security
704
706
708
710
712
714
716
718
720
722
724
726
728
730
732
734
736
702

FIG._7

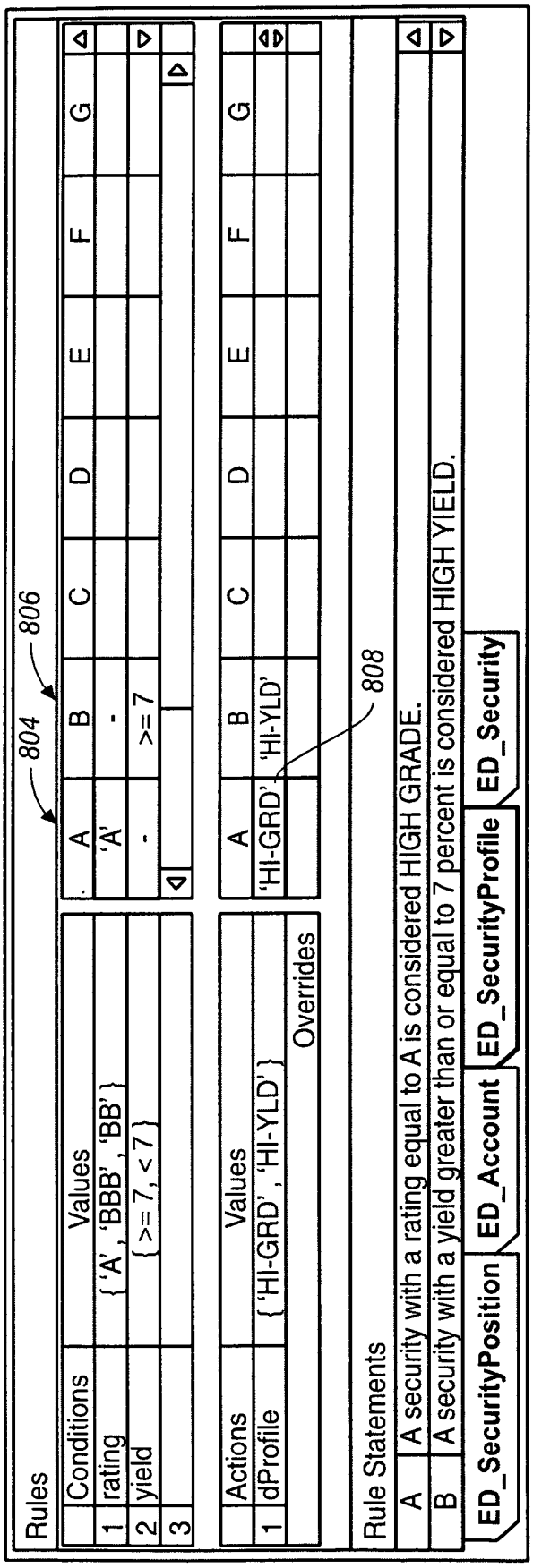
Rules
804
806
Conditions
Values
A
B
C
D
E
F
G
1 rating
{'A', 'BBB', 'BB'}
'A'
-
2 yield
{>= 7, < 7}
-
>= 7
3
Actions
Values
A
B
C
D
E
F
G
1 dProfile
{'HI-GRD', 'HI-YLD'}
'HI-GRD'
'HI-YLD'
808
Overrides
Rule Statements
A
A security with a rating equal to A is considered HIGH GRADE.
B
A security with a yield greater than or equal to 7 percent is considered HIGH YIELD.
ED_SecurityPosition
ED_Account
ED_SecurityProfile
ED_Security

FIG._8

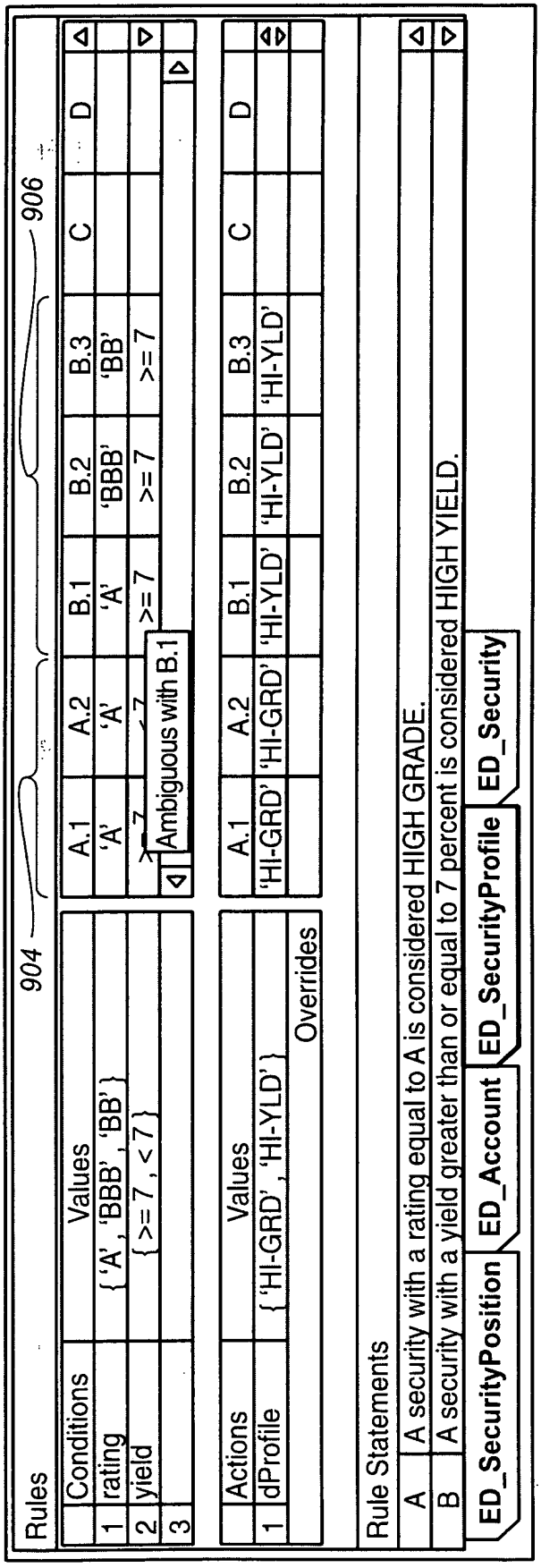
Rules
904
906
Conditions
Values
A.1
A.2
B.1
B.2
B.3
C
D
1 rating
{'A', 'BBB', 'BB'}
'A'
'A'
'A'
'BBB'
'BB'
2 yield
{>= 7, < 7}
7
>= 7
>= 7
>= 7
3
Ambiguous with B.1
Actions
Values
A.1
A.2
B.1
B.2
B.3
C
D
1 dProfile
{'HI-GRD', 'HI-YLD'}
'HI-GRD'
'HI-GRD'
'HI-YLD'
'HI-YLD'
'HI-YLD'
Overrides
Rule Statements
A
A security with a rating equal to A is considered HIGH GRADE.
B
A security with a yield greater than or equal to 7 percent is considered HIGH YIELD.
ED_SecurityPosition
ED_Account
ED_SecurityProfile
ED_Security

FIG._9

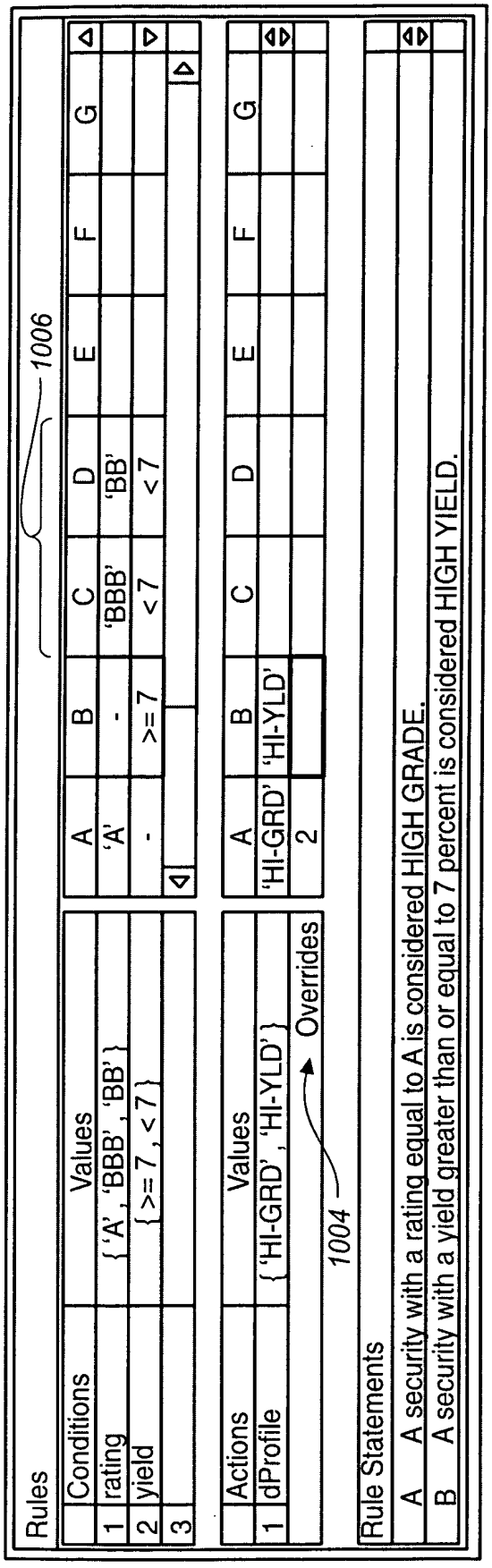
Rules
1006
Conditions
Values
A
B
C
D
E
F
G
1 rating
{'A', 'BBB', 'BB'}
'A'
-
'BBB'
'BB'
2 yield
{>= 7, < 7}
-
>= 7
< 7
< 7
3
Actions
Values
A
B
C
D
E
F
G
1 dProfile
{'HI-GRD', 'HI-YLD'}
'HI-GRD'
'HI-YLD'
2
Overrides
1004
Rule Statements
A A security with a rating equal to A is considered HIGH GRADE.
B A security with a yield greater than or equal to 7 percent is considered HIGH YIELD.

FIG._10

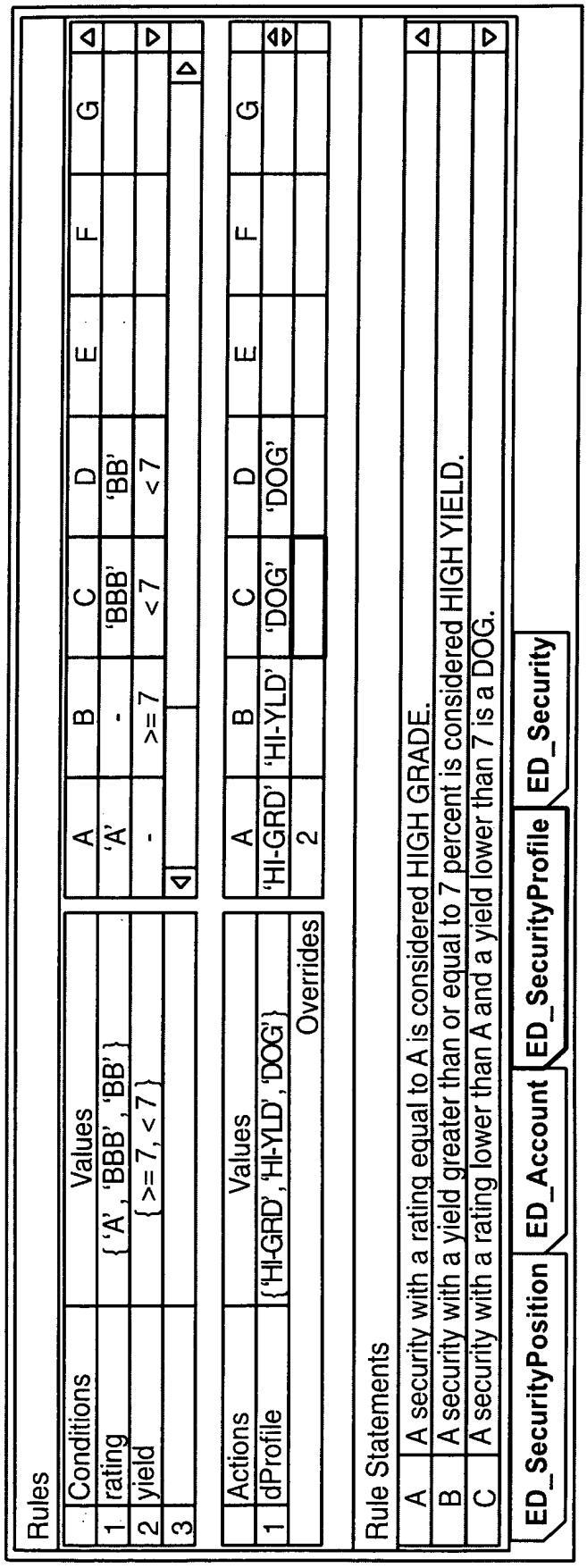
Rules
Conditions
Values
A
B
C
D
E
F
G
1 rating
{'A', 'BBB', 'BB'}
'A'
-
'BBB'
'BB'
2 yield
{>= 7, < 7}
-
>= 7
< 7
< 7
3
Actions
Values
A
B
C
D
E
F
G
1 dProfile
{'HI-GRD', 'HI-YLD', 'DOG'}
'HI-GRD'
'HI-YLD'
'DOG'
'DOG'
2
Overrides
Rule Statements
A A security with a rating equal to A is considered HIGH GRADE.
B A security with a yield greater than or equal to 7 percent is considered HIGH YIELD.
C A security with a rating lower than A and a yield lower than 7 is a DOG.
ED_SecurityPosition
ED_Account
ED_SecurityProfile
ED_Security

FIG._11

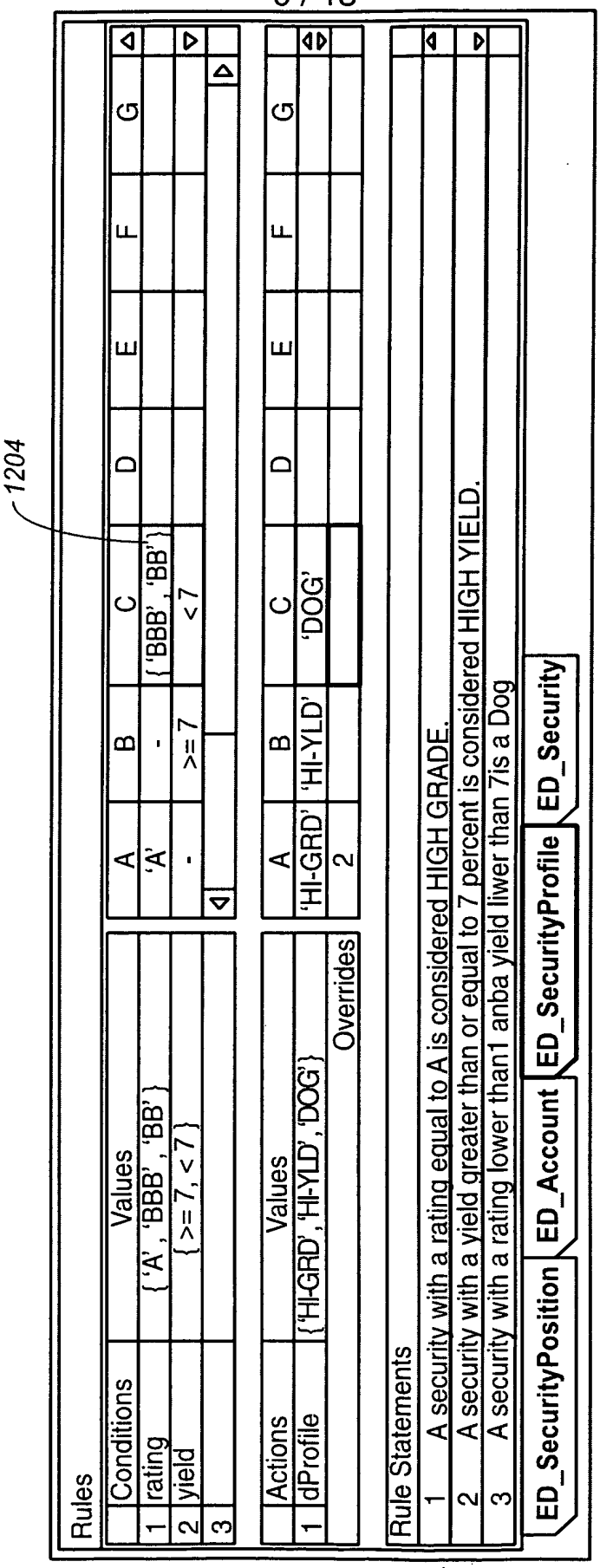
1204
Rules
Conditions
Values
A
B
C
D
E
F
G
1 rating
{'A', 'BBB', 'BB'}
'A'
-
{'BBB', 'BB'}
2 yield
{>= 7, < 7}
-
>= 7
< 7
3
Actions
Values
A
B
C
D
E
F
G
1 dProfile
{'HI-GRD', 'HI-YLD', 'DOG'}
'HI-GRD'
'HI-YLD'
'DOG'
Overrides
2
Rule Statements
1 A security with a rating equal to A is considered HIGH GRADE.
2 A security with a yield greater than or equal to 7 percent is considered HIGH YIELD.
3 A security with a rating lower than1 anba yield liwer than 7is a Dog
ED_SecurityPosition
ED_Account
ED_SecurityProfile
ED_Security

FIG._12

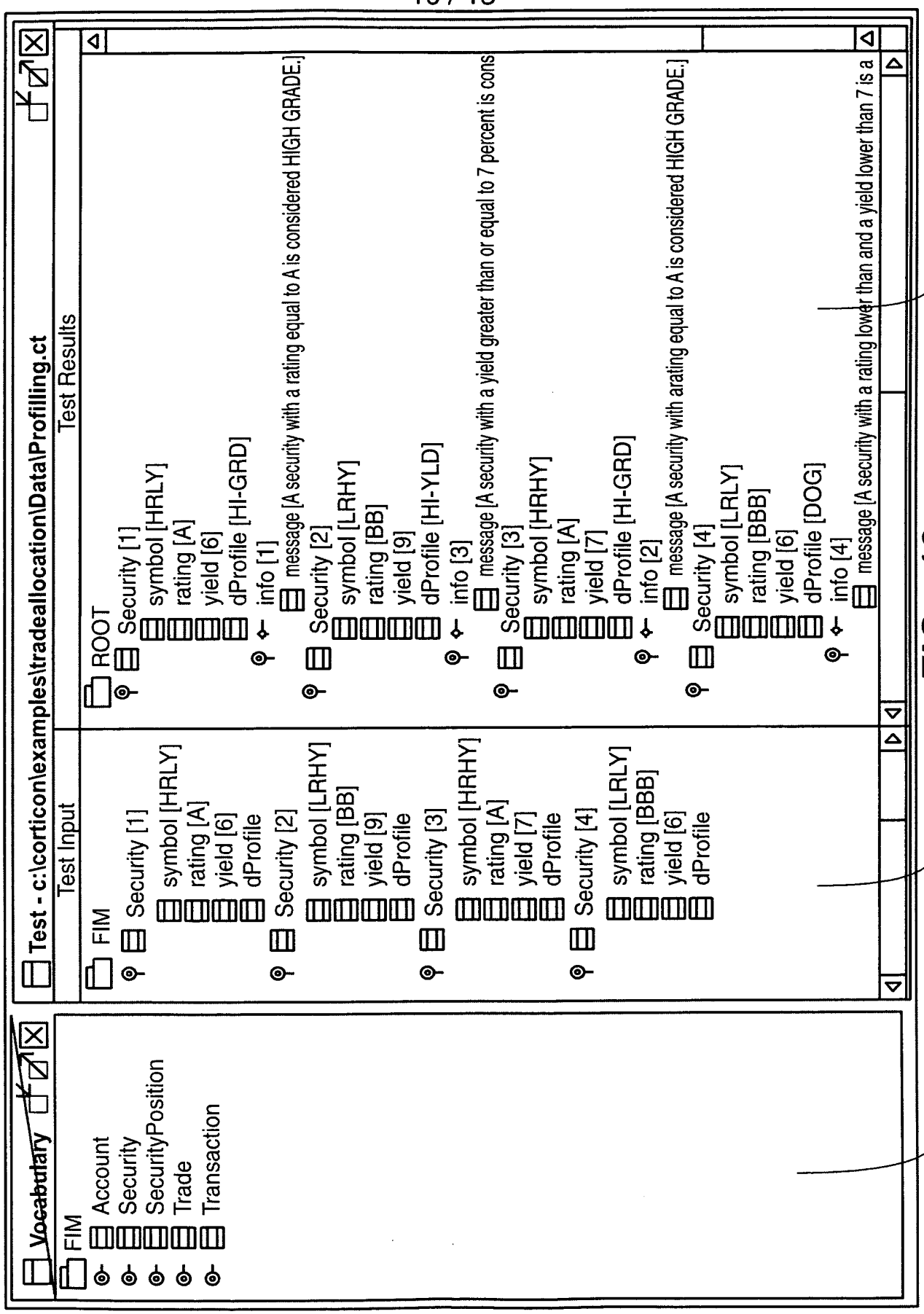
Vocabulary
FIM
Account
Security
SecurityPosition
Trade
Transaction
Test - c:\corticon\examples\tradeallocation\DataProfilling.ct
Test Input
Test Results
FIM
Security [1]
symbol [HRLY]
rating [A]
yield [6]
dProfile
Security [2]
symbol [LRHY]
rating [BB]
yield [9]
dProfile
Security [3]
symbol [HRHY]
rating [A]
yield [7]
dProfile
Security [4]
symbol [LRLY]
rating [BBB]
yield [6]
dProfile
ROOT
Security [1]
symbol [HRLY]
rating [A]
yield [6]
dProfile [HI-GRD]
info [1]
message [A security with a rating equal to A is considered HIGH GRADE.]
Security [2]
symbol [LRHY]
rating [BB]
yield [9]
dProfile [HI-YLD]
info [3]
message [A security with a yield greater than or equal to 7 percent is cons
Security [3]
symbol [HRHY]
rating [A]
yield [7]
dProfile [HI-GRD]
info [2]
message [A security with arating equal to A is considered HIGH GRADE.]
Security [4]
symbol [LRLY]
rating [BBB]
yield [6]
dProfile [DOG]
info [4]
message [A security with a rating lower than and a yield lower than 7 is a
1304
1306
1308

FIG._13

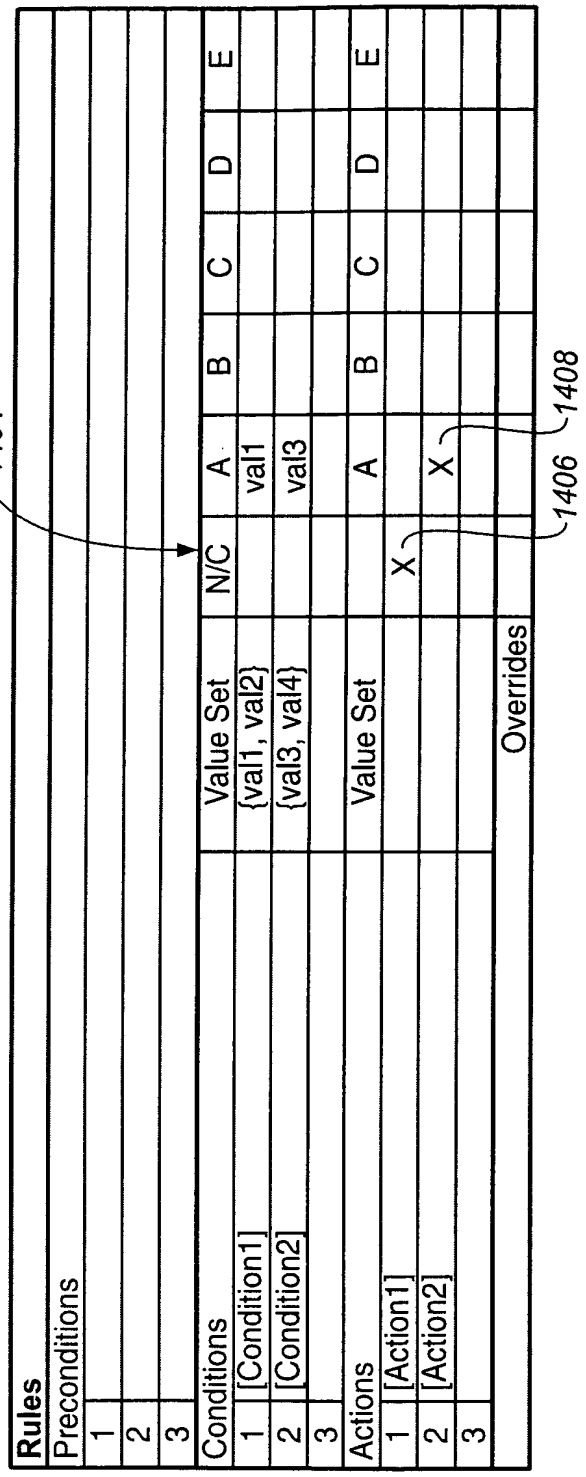
Rules
Preconditions
1
2
3
Conditions
N/C
A
B
C
D
E
1 [Condition1]
Value Set
{val1, val2}
val1
2 [Condition2]
{val3, val4}
val3
3
Actions
1 [Action1]
2 [Action2]
3
X
Overrides
1404
1406
1408
1402

FIG._14

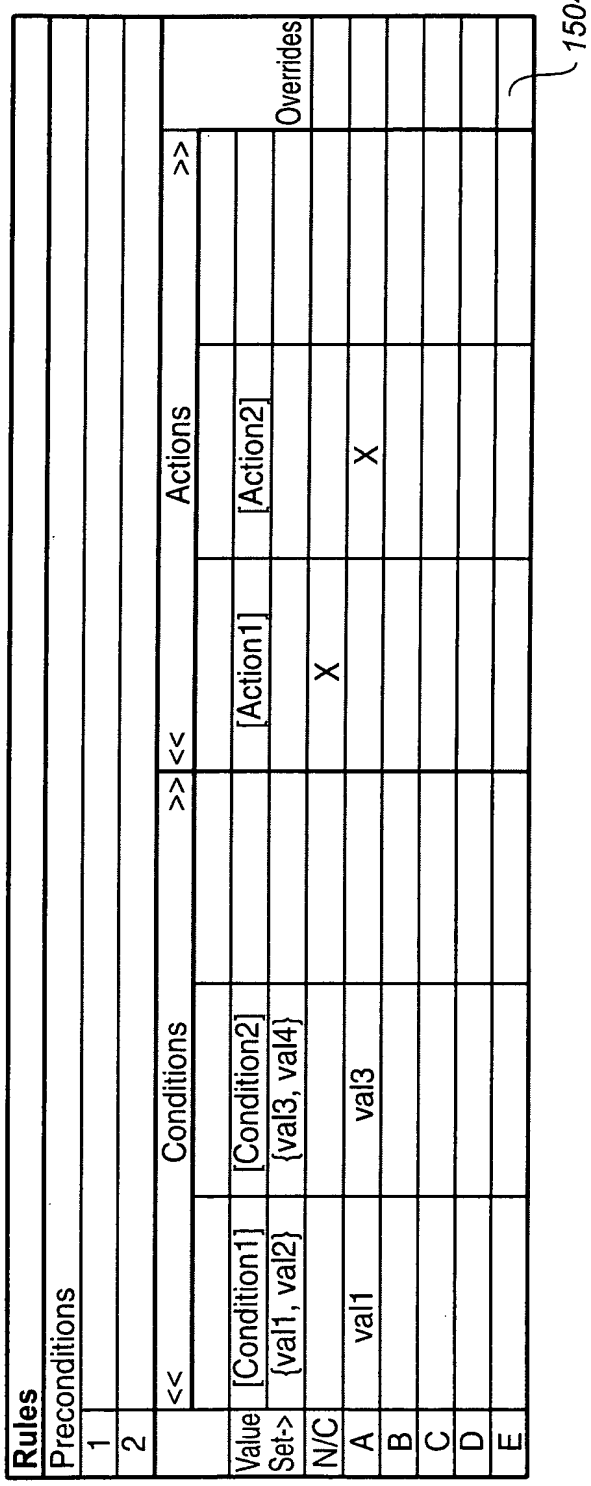
Rules
Preconditions
1
2
<<
Conditions
>>
<<
Actions
>>
Value Set->
[Condition1]
{val1, val2}
[Condition2]
{val3, val4}
[Action1]
[Action2]
Overrides
N/C
X
A
val1
val3
X
B
C
D
E
1504
1502

FIG._15

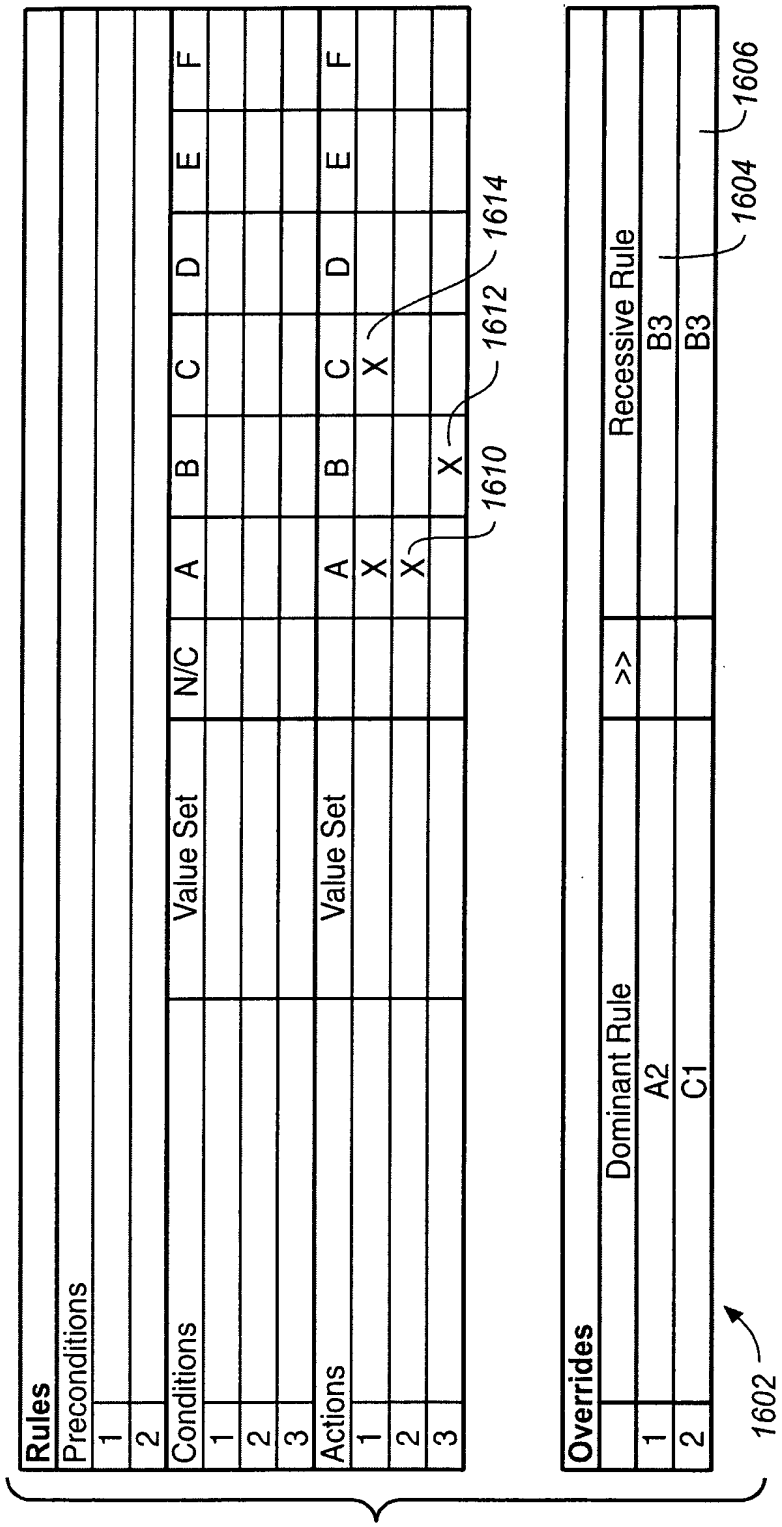
Rules
Preconditions
1
2
Conditions
Value Set
N/C
A
B
C
D
E
F
1
2
3
Actions
Value Set
A
B
C
D
E
F
1
X
X
2
X
3
X
1610
1612
1614
Overrides
Dominant Rule
>>
Recessive Rule
1
A2
B3
2
C1
B3
1602
1604
1606

FIG._16

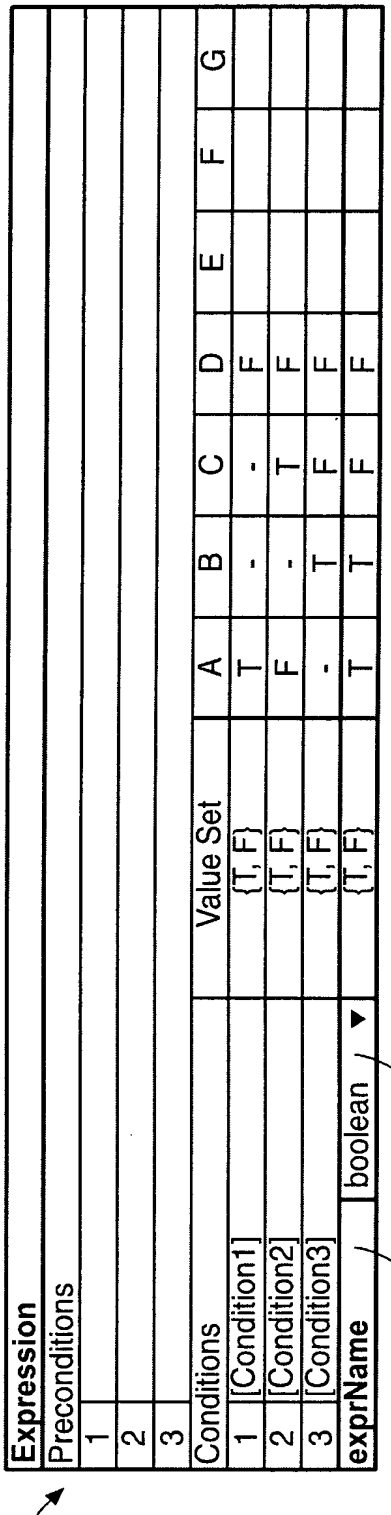
Expression
Preconditions
1
2
3
Conditions
Value Set
A
B
C
D
E
F
G
1
[Condition1]
{T, F}
T
-
-
F
2
[Condition2]
{T, F}
F
-
T
F
3
[Condition3]
{T, F}
-
T
F
F
exprName
boolean
{T, F}
T
T
F
F
1702
1704
1706

FIG._17

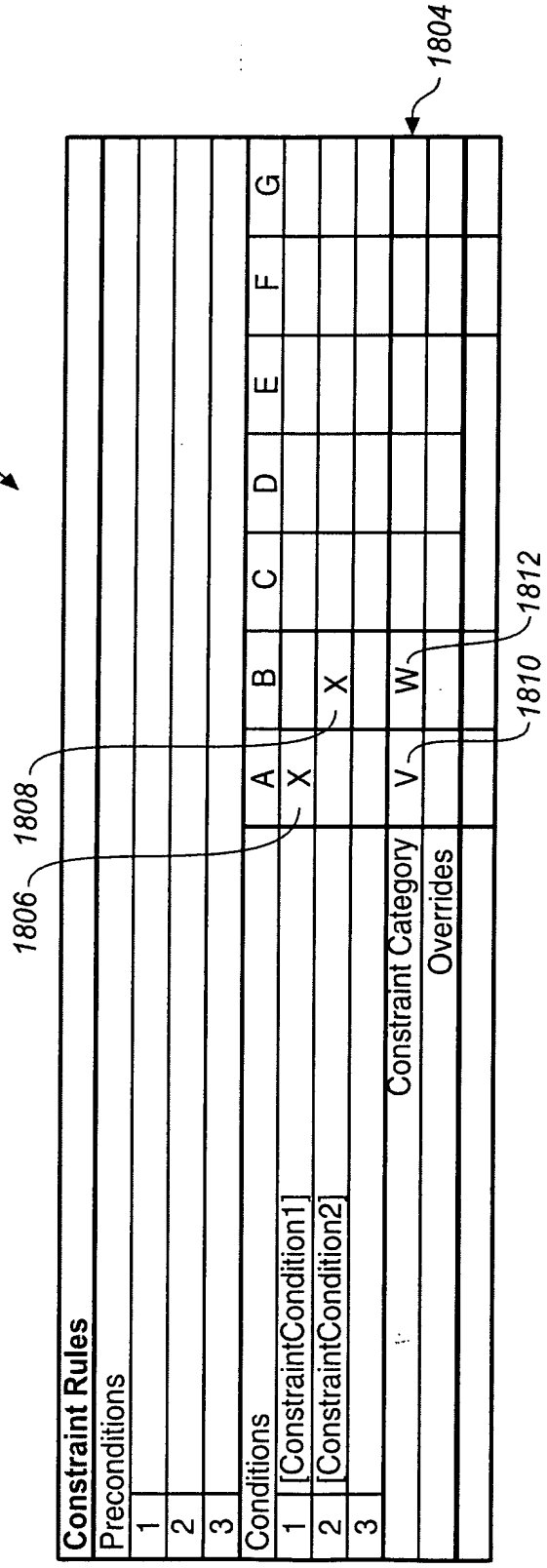
1802
1804
1806
1808
1810
1812
Constraint Rules
Preconditions
1
2
3
Conditions
1 [ConstraintCondition1]
2 [ConstraintCondition2]
3
A
B
C
D
E
F
G
X
X
V
W
Constraint Category
Overrides

FIG._18